

Testimony of Commissioner Bob Lieberman
Illinois Commerce Commission
May 3rd, 2007
Sub-committee on Energy and Air Quality
Committee on Energy and Commerce
U.S. House of Representatives

Talking Points

Barriers to implementation at state level

1. **Sticker shock** – In an era of rising energy prices it takes a brave Commission to pile more costs on, particularly given the indeterminacy and uncertainty of the benefits, even in the name of possible lower system costs and more accurate customers incentives in the long run.
2. **Unknown or unknowable benefits** – State regulatory commissions are structured – by history, design and culture – not to be visionaries. Their inability to deal with indeterminacy of the benefits of new “transformational” smart grid technologies makes it easier to argue that the known costs are greater than the unknown benefits.
3. **Lack of customer demand** – Regulators are reluctant to take the initiative because they don’t perceive much of a demand from end-users for the increased capacity and functionality that smart grids and smart meters would provide.

Possible policy approaches at the Federal level

1. **Federal subsidy** - If achieving a more rapid deployment of smart grid technologies was a high Federal priority, nothing would get it to move faster than some kind of Federal subsidy. Congress has been quite generous recently – in the name of energy security and environmental improvement – to various electricity production technologies. If we were really interested in a cost-effective energy security and environmental improvement policy, Congress ought to be at least as generous to with “smart-grid” deployment. Giving consumers the information and tools they need to consume energy more efficiently and smarter is by far the most cost effective energy production, security and environmental improvement policy we could adopt.
2. **Technical assistance** - State Commissions have limited staff and extremely limited resources to take on new ideas and to develop new analytic tools and methods. If DOE were given additional resources to support state commissions in the development of tools, analytic methods and models to understand how to manage uncertainty rather than being overwhelmed by it and to estimate the benefits of a rapid deployment of smart grid technology on a probabilistic basis, this would go a long way to overcoming what appears to be state policy inertia.
3. **Build demand through public education and wholesale price transparency** – Underappreciated success of wholesale markets is the development of readily available hourly price. Yet it is my experience that virtually no customers

understand that for 98% of the hours in a year the wholesale prices are significantly lower than the retail prices they currently pay. Until customers are aware of this fact, and have the information they need to understand how they will benefit through access to lower priced electricity, why would they be willing to ask, and more importantly, pay for new technologies that would allow that to occur. If DOE had the resources they could work with state commissions or state energy offices to conduct education campaigns to provide customers with the information they need. DOE or RTO's could also purchase time on the Weather Channel or local radio stations so that as they gave the local weather, they also announced the hourly electricity price and the twenty-four hour forecast.

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My name is Bob Lieberman and I have been a utility regulator in Illinois since February 2005. I am currently the Chairman of the Midwest Demand Response Initiative, a collaborative effort of 14 Midwest state regulatory commissions, utilities and other stakeholders trying to educate and learn from each other about how to implement regional price responsive retail demand. I am also on the executive committee of the Organization of MISO States (OMS), a Regional State Committee working together to ensure that the regional RTO – the Midwestern ISO – works in the interests of customers as well as suppliers.

Before that, for nearly ten years, I ran a Chicago-based not-for-profit called the Center for Neighborhood Technology where we created and managed community-based demand response and energy efficiency programs in partnership with Commonwealth Edison, the local Chicago utility. As part of that effort, we introduced the first in the nation hourly pricing pilot for residential customers, the success of which prompted the Illinois General Assembly to

recently mandate that electric utilities offer such a program to all residential customers in the state. Prior to that, among other things, in the mid-1980's I worked with then-State Representative Hastert on re-writing the Illinois Public Utility Act, a generally thankless if necessary task.

In testifying before you today, I do not represent the views of the Illinois Commerce Commission, the Organization of MISO States nor the National Association of Regulatory Commissioners. My perspectives today are mine alone.

The question I was asked to address relates to possible actions that the Federal Government might take to create incentives for state public utility commissions to move more rapidly to upgrade retail electricity distribution information systems from their current state of the art 1920's technology to something that more closely resembles early 21st century technology, i.e. systems that are digital rather than analog, two way rather than one way, open rather than closed and network-based rather than hierarchical.

Unfortunately, I have no easy answers. This is, in fact, a very difficult question to answer as it goes right to the heart of the well-documented legal and institutional eccentricities of our current regulatory and governance system for electricity markets.

In anticipation of this conversation and in order to more precisely underscore some of the barriers to implementation, I have recently reviewed a few of the docketed cases from Midwest states that were initiated to address the Epect smart metering standard. To be fair, many of these dockets have not been completed, but I think there is enough in the record at this point to be able to summarize what some of the major issues are.

In short, most of the dockets express – roughly – the following concerns.

1. These new gizmos are really expensive;
2. We have no way to measure the benefits, or alternatively – in some of the dockets, there is no discussion of benefits at all;
3. There is no demand - no one is asking us for these meters;

Let me examine these barriers one at a time.

Expensive gizmos: I think it is fair to say that in many cases state commissions and their staffs – when seeing the initial cost of a “smart grid” deployment - suffer from sticker shock. The subtext, of course, is that in an era of rising energy prices, it takes a brave Commission to pile more costs on, particularly given the indeterminacy and uncertainty of the benefits, even in the name of possible lower system costs and more accurate customer incentives in the long run. Despite the

fact that the costs of deployment have fallen dramatically over the past ten years, and are likely to continue to fall, the initial costs still seem high.

Unknown or unknowable benefits: The benefits are uncertain and hard to calculate. Most public utility regulatory commissions are – largely by history, design and culture – what I will call “practical and practicing incrementalists.” Vision and imagination are not our strong suit. We can only decide on the basis of the record before us, and we generally react to the petitions of others. Future calculated benefits have to be greater than real visible costs. Rates have to be deemed just and reasonable.

In the old days, before restructuring, state commissions’ assumed away the future uncertainty implicit in their decisions and pretended to know what the costs and benefits would be in the future. It was never a particularly good assumption, but at least it allowed decisions to be made within the static analytic tools and existing legal frameworks that were available. After restructuring, however, along with the rise of organized regional wholesale markets, the ability to simply assume away the uncertainty disappeared. Also, some state commissions may be more willing to shift the uncertainty to some vague market mechanism to deliver benefits or costs, rather than take the explicit responsibility for waving significant new costs into rates. In either case, state commissions can no longer assume that we know what the future looks like. The condition of indeterminacy – a constant reality of the world outside of the regulatory process -is not the

regulator's friend. The inability to predict the behavior of some critical variable vastly complicates the regulator's job and in large measure stymies the analytic tools regulators and their staff's have at their disposal.

Lack of demand: One gets a sense that regulators are reluctant to take the initiative because they don't perceive much of a demand from end-users for the increased capacity and functionality that a wide-spread smart grid and smart meter deployment would provide. Why should they impose costs on customers when the customers aren't asking for functionalities that the costs would support. Doesn't this remind you of the early days of telephone deregulation when you heard such things as "plain old telephone service" and no one wanted to pay for network upgrades to digital technologies?

For all these reasons – and given the context in which state regulators function - a "transformational" technology innovation that requires a significant up-front investment to achieve an uncertain level of future benefits like "smart meters" or "smart grids" is viewed with some perhaps not unreasonable skepticism and trepidation.

So what is to be done?

First, I would suggest that – if possible - you deal with the sticker shock problem. I don't want to pretend that I understand the intricacies of the Federal budget

process nor do I want to be seen as utterly naïve, but if achieving a more rapid deployment of smart grid technologies was a high Federal priority, nothing would get it to move faster than some kind of Federal subsidy. I have no idea what the likelihood of such a policy might be, but it occurs to me that the Congress was recently quite generous – in the name of increased energy security and environmental improvement – to various electricity production technologies, including nuclear, coal and wind power. If we were really interested in a policy of cost-effective energy security and environmental improvement – we should be at least as generous with “smart grid” deployment as we are with nuclear and wind. Giving consumers the information and tools that they need to consume energy more efficiently and smarter is by far the most cost-effective energy production, security and environmental improvement policy we could adopt. As far as I’m concerned, the “smart” in smart grid and smart meters applies not only to the technology but to consumers as well. Consumers, themselves, are a grid resource, just like a peaking turbine. What we need are smart and efficient consumers – “smart” grids and “smart” meters are – in part - a tool to achieving that end.

In addition, a Federal subsidy could help to ensure interoperability and other important national criteria through the establishment of outcome-based performance standards for the receipt of the subsidy.

However, we are not proud. Short of a direct Federal subsidy, we will take indirect Federal subsidies. One of the problems often cited as a barrier to rapid deployment is the fact that existing investments in traditional metering and distribution information technologies are still in service and have not been fully depreciated. To remedy this so-called stranded cost barrier, for example, Congress could tell the IRS to allow accelerated depreciation for old transmission and distribution assets if they are replaced with new “smart grid” assets.

State public utility commissions may be encouraged by this action to follow suit and approve rate treatment that accelerates removing these antique meters from the utility rate base.

Second, we need to deal with the uncertainty about the level of benefits that will be achieved. Frankly, state regulatory commissions have limited staff and extremely limited resources to take on new ideas and to develop new tools and methods. In Illinois, we are so overwhelmed with our current assignments that the idea of trying to develop the extensive knowledge base to adequately address these new technologies and new ideas is simply outside the realm of our current reality. In my conversations with other regulators, this is the case in many other states, as well. It is my sense that when Congress simply tells the states to study this or study that, the result is an effort commensurate with the state's staffing and budget resources, which – all other things being equal - usually provides for a less than satisfactory outcome.

So we need help. We simply don't have the resources to develop the knowledge or the expertise on our own. We need help in developing the tools, analytic methods and models that would allow us to understand how to manage uncertainty instead of being overwhelmed by it, and how to estimate the benefits of a rapid deployment of smart grid technology on a probabilistic basis. We need access to the best thinking from around the country in this regard.

To this end, I want to note that I have great regard for Kevin Kolevar, and the staff at the Office of Energy Delivery and Electricity Reliability for the excellent work they have done to educate stakeholders on the intricacies of these difficult issues and to support regional efforts like the Mid-Atlantic Distributed Resources Initiative and the Midwest Demand Response Initiative. In the future, it would be enormously helpful if they had the additional resources to provide state commissions with the kind of on-going technical assistance I mentioned above.

Finally, and maybe most importantly, we need to deal with the problem of the lack of demand for the new functionalities provided by the new technologies. It really is no surprise to me that there is not a rising clamor among the population for "smart" meters. For eighty years, we have lived – and prospered – with a dumb network and dumb meters. Other than the geeks among us, why would we even know enough to want to change?

In this context, one of the real successes of the organized wholesale electricity markets over the last decade – and a success that I think has been largely under-appreciated – is the development of a visible and transparent hourly price. If you know where to look, you can determine the value of electricity at any hour. If you look at those hourly prices over time, you know that as much as 98% of the hours, the prices are really low – in fact, often lower than the hedged same-price every hour electricity product offered at retail by the distribution utilities. And if you take the average of the hourly prices over the course of almost any year, they are almost universally lower than the hedged same-price-every-hour retail price.

But I would argue – based on my experience in Illinois -- that 95% of all customers -- residential, small commercial, municipal – have absolutely no idea that the price of electricity varies by the hour and that the average of the hourly prices is likely to be significantly lower than the hedged retail price they have traditionally seen. And until they know that, they won't realize that there is something in it directly for them; that investing in smart meters will give them access to lower cost electricity. Unless they are informed of these benefits, why would they be willing to start asking, and more importantly, start paying for the technologies that would allow that to occur?

In many ways, therefore, it seems to me that the single most cost-effective way to move state commissions to more rapid deployment is to increase the demand

for these technologies, and the most direct way to increase the demand is to explain to consumers what they are missing. What we need is an independent third party to make consumers aware of what the hourly prices are, to make them aware that there are lower prices available and that they can't have access to them because the technology to give them access to those lower prices is not in place. State commissions or state energy offices are perfectly suited to this educational role with DOE providing resources and technical assistance

I say this only half facetiously – I guess the other half is serious – but imagine the RTO or DOE buying time on the Weather Channel so that every hour – when they give the weather for Chicago, or for Cleveland, or for Philadelphia or for Washington D.C., they also told you what the local wholesale price of electricity was for that hour. Or every time you checked the weather for your hometown on Yahoo, you also got the hourly electricity price?

Until we make these markets transparent and the wholesale prices visible to retail customers – until we educate customers so that they understand what's in it for them to invest in these new technologies – we are unlikely to get a national deployment any time soon. We will continue to talk about actions needed rather than seeing a smart grid implemented.

Thank you for your attention. I will be happy to answer any questions.

